California Cooperative Snow Surveys Annual Meeting

Stanford Sierra Conference Center

Wednesday, October 27th 2009

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National Weather Service
California Nevada River Forecast Center
Sacramento, CA



Weather Forecast









Weather Briefing



- http://water.weather.gov/
- http://hadar.cira.colostate.edu/ramsdis/online/f6_10_0.html
- http://www.cnrfc.noaa.gov/model_loops/npac/18zgfs_500_240l_npac.php
- http://www.cnrfc.noaa.gov/model_loops/18zgfs_pcp_240l.php
- http://www.cpc.noaa.gov/products/predictions/814day/814day.03.gif
- http://www.cpc.noaa.gov/products/predictions/814day/814prcp.new.gif
- http://www.cpc.noaa.gov/products/predictions/814day/814temp.new.gif
- http://www.wrh.noaa.gov/total_forecast/getprod.php?wfo=rev&sid=rev&pil=rec



Alan Haynes Service Coordination Hydrologist



Background

- U of U graduate (BS & MS in Meteorology)
- UNIVERSITY OF UTAH

20 Years in the NWS/NOAA



- 9 Years at the CNRFC
- Two years CNRFC Outreach & Customer Service Lead
- One year as the Service Coordination Hydrologist

Goals & Interests

- Continuous improvement of hydrologic services
- Innovation and partnership
- Creating a bigger context for NWS services



Service Coordination Hydrologist



- New position in NWS
- Now filled at all 13 NWS RFCs
- Primary external liaison
- Coordinate outreach & customer service
- Serve on management team
- 25% Shift Forecaster



Mission of NWS Hydrologic Services Program



 Provide river and flood forecasts and warnings for the protection of lives and property.

 Provide basic hydrologic forecast information for the nation's environmental and economic well being.



Staffing



CNRFC

- Hydrologist in Charge
- DOH
- SCH
- 4 Senior Hydrologists
- 2 Hydrologists
- 1 Senior HAS Forecaster
- 2 HAS Forecasters
- 1 Information Technology
 Officer
- Administrative Assistant

DWR/DFM

- Hydrology Branch Chief
- 2 Forecasting Chiefs
- ~6 Engineers/Forecasters



Schedule Driven By Data Cycle



Weather balloons collect data globally at 0000 UTC and 1200 UTC (4 AM & 4 PM PST)



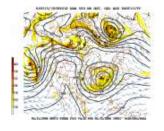
Supercomputers run weather models (2-5 hours)

Temperature and precipitation outputs from weather models available for Hydrologic model (2-3 hours)

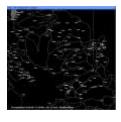


Data Cycle (Continued)





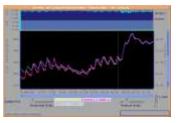












forecasts

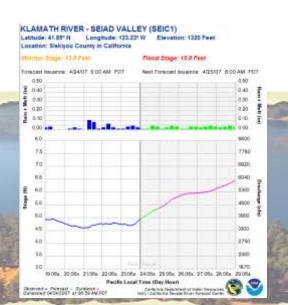
observations

meteorologist

hydrologic model



hydrologist





Hours of Operations





"Dry Season"

Apr 15th – Oct 15th

- 🔅 Monday Friday 6 AM to 4 PM
- Saturday & Sunday 6 AM to 2 PM
- One hydro run per day (~8:30 AM)
 - Snowmelt operations typically continue until June



Hours of Operations





"Wet Season"

Oct 15th – Apr 15th

- Monday Friday 6 AM to 6 PM
- Saturday & Sunday 6 AM to 2 PM
- Two hydro runs per day M-F (~8:30 AM & ~1:30 PM)
- Afternoon run typically incorporates more release changes
- One hydro run per day Sat & Sun (~8:30 AM)



River Forecast Points

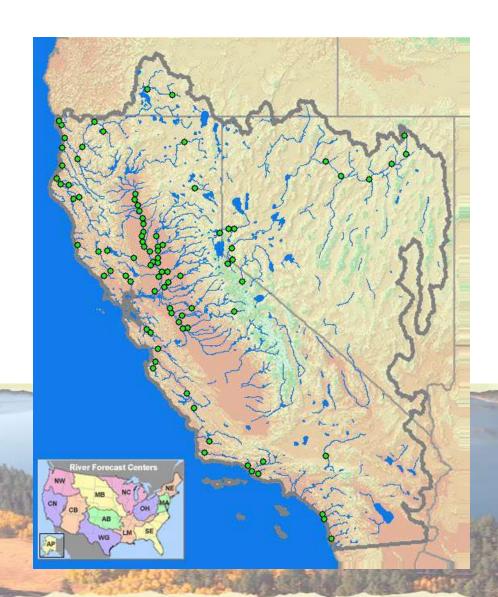




Search Help

Hydrology Precipitation Data River/Reservoir Data River Guidance Flash Flood Guidance **AHPS/ESP Traces** WFO Hydro Products Water Supply River Flood Outlook Google™ Maps Data Weather **Quick Summary** CNRFC/HPC QPF Watches/Warnings Satellite Imagery Radar Imagery Observations Weather Forecasts Numerical Models Climate Data and Indices **Climate Forecasts** El Niño and MJO Teleconnections Hydroclimatology Local Info and Links Research & Outreach Storm Summaries Publications Newsletter Links **RFC Map** WFO Map Miscellaneous Links Information About Us Flood Forecasting Flash Flooding Water Supply **Spring Snowmelt** Acronyms **NWS Glossary** Contact Us Webmaster Email







Weather & Hydrology Briefings

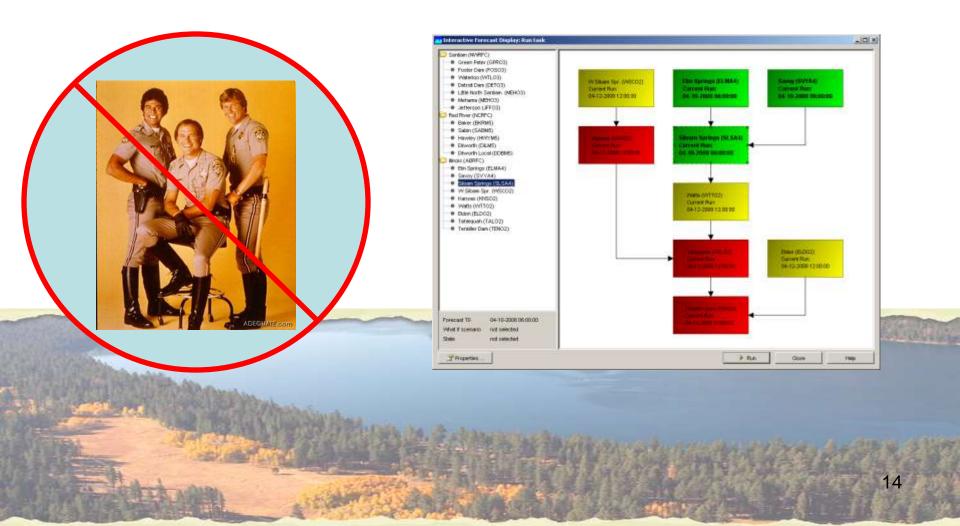


- Originally it was strictly an internal briefing at the JOC involving the NWS, DWR, BOR, and USACE
- Now it is broadcast over the web to give decision makers the latest hydrometeorological information
- Weather briefing covers California & Nevada for the next
 10 days with a focus on the next three days (~10-15 min)
- Hydrology briefing covers forecasts and impacts for the next five days (~5-10 min)



Community Hydrologic Prediction System (CHPS)







Community Hydrologic Prediction System (CHPS)



- New architecture for NWS river modeling system
- Very modular, uses "open source" approach i.e., JAVA and XML
- Major undertaking phased approach throughout NWS
- Goal is to completely transition to the new architecture before the next water year begins (October 2010)
- Initially our goal is to emulate our current operations
- Currently running "parallel" operations



Community Hydrologic Prediction System (CHPS)



- New system will make it possible to collaborate with partners and researchers
- And will allow us to infuse new methodologies in a very modular fashion
- Some of the possibilities that we've considered are:
 - Tide forecasting
 - New snow model
 - WFO grids
- One of the more immediate impacts will be to greatly ease the development and methodology for producing short term ensemble forecasts over the next one to two years (ESP)



California Nevada River Forecast Center



Alan S. Haynes Service Coordination Hydrologist (SCH)

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